Federal Aviation Administration – William J. Hughes Technical Center

National Airport Pavement Test Facility (NAPTF)

Contract No: 692M15-20-D-00004

ARA TO 005 Structural Airport Pavement NDT and Evaluation

5.1.1.2 CC9 NDT Data Collection (Task 4.1.1.2)

CC9 NDT Survey Notes

Device: GPR – Cart

Survey: Core Sections 3-4 Cracking 20220428

Date: 4/28/2022

Operators: Douglas Evans

Folder Name: 20220428 GPR Cart CC9 Core Sec 3-4 Cracking Raw Data

File Format: DZT

**General Notes**

* Transverse data collected along eight transverse test lines as indicated.
  + Cart is aligned with white transverse line and direction of travel is from Offset -26.66 ft. to +26.66 ft. (North to South).
  + Survey starts and stops with the antenna centered on the yellow longitudinal edge of test area lines.
* Longitudinal data collected along six indicated offsets on partial survey lines.
  + Direction of travel is from West to East.
  + Start and stop locations depended on the core locations. Exact locations given per offset below.
  + Survey starts and stops with the antenna centered on a marked transverse line.
* Data collected with 900 MHz and 2.6 GHz ground-coupled antennas.
* Calibration of DMI performed before data collection with each antenna and value recorded.
* Core locations that share a line of survey are within 2 inches of the indicated line. During testing, slight deviations were made in order to cross over every mark exactly.
* A user mark was placed when crossing a core location.

**Settings**

Parameter 900 MHz Antenna 2.6 GHz Antenna

Transmit Rate 100 KHz 100 KHz

Samples/Scan 512 512

Bits/Sample 16 16

Range 15 ns 8 ns

Dielectric 4.00 (default) 4.00 (default)

Rate (Scans/Second) 100 (default) 100 (default)

Scans/Unit 30 scans/ft. 90 scans/ft.

Gain Points 3 2

Vertical Low Pass – LPIIR 2500 MHz 0

Vertical High Pass – HPIIR 225 MHz 10 MHz

Vertical Low Pass – LPFIR 0 5000 MHz

Vertical High Pass – HPFIR 0 400 MHz

Stacking Filter 5 5

**DMI Calibration**

Distance 900 MHz Antenna 2.6 GHz Antenna

10.00 ft. -493.50 -495.10

**Data Collection File Numbers**

Transverse Survey Lines

Location 900 MHz Antenna 2.6 GHz Antenna

Station 1+13.4 (2S-C1) 029 003

Station 1+14.7 (2S-C2) 030 004

Station 1+19.7 (2S-C3) 031 005

Station 1+65.4 (3N-C3) 032 006

Station 1+67.2 (3N-C1, 3S-C1) 033 007

Station 1+74.1 (3N-C2) 034 008

Station 1+77.4 (3N-C4) 035 009

Station 1+79.7 (3S-C2) 036 010

Longitudinal Survey Lines

Location Station (Start & End) 900 MHz Antenna 2.6 GHz Antenna

Offset -18.0 (3N-C3) 1+20 to 1+80 037 011

Offset -17.5 (3N-C4) 1+20 to 1+80 038 012

Offset -11.5 (3N-C1, 3N-C2) 1+20 to 1+80 039 013

Offset +9.3 (2S-C1) 0+60 to 1+20 040 014

Offset +11.2 (2S-C2, 2S-C3) 0+60 to 1+35 041 015

Offset +17.6 (3S-C1, 3S-C2) 1+20 to 1+95 042 016

**Survey Notes**

* Nine core locations were provided as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TRANSITION SECTION** | **CORE NUMBER** | **STATION (FT)** | **OFFSET (FT)** | **ID** |
| 2S | 1 | 113.3 | 113 | 2S-C1 |
| 2S | 2 | 114.6 | 134 | 2S-C2 |
| 2S | 3 | 119.5 | 134 | 2S-C3 |
| 3S | 1 | 167.0 | 217 | 3S-C1 |
| 3S | 2 | 179.8 | 215 | 3S-C2 |
| 3N | 1 | 167.3 | 139 | 3N-C1 |
| 3N | 2 | 174.1 | 140 | 3N-C2 |
| 3N | 3 | 165.5 | 225 | 3N-C3 |
| 3N | 4 | 177.7 | 220 | 3N-C4 |

* Transverse and longitudinal survey lines were chosen based on the marked locations.